

## REMARKS

The Office Action dated February 22, 2005 has been received and carefully considered. Claims 1-13 and 18-33 are pending. Claims 18 and 33 are allowed, claims 8 and 26 are objected to, and claims 1-7, 9-13, 19-25 and 27-32 are rejected. Reconsideration of the outstanding objections and rejections in the present application is respectfully requested in view of the following remarks.

### **Allowability of Claims 8, 18, 26 and 33**

The Applicants note with appreciation the indication at page 8 of the Office Action that claims 18 and 33 are allowed and that claims 8 and 26 would be allowable if rewritten in independent form including all limitations of their base claims and any intervening claims. The Applicants have elected to forgo rewriting these claims in view of the following remarks.

### **Amendment of Claims 19 & 33**

The element of etching in claim 19 has been amended to recite etching said first and second exposed surface portions of the dielectric spacer layer while forming first and second L-shaped spacers for the gate structure at respective locations of the the first and second exposed surface portions. The added elements indicate that the dielectric spacer layer is etched at locations where the L-shaped spacers are formed.

Claim 32 has been amended to clarify a relationship between elements.

Claim 33 has been amended. The amendment to claim 33 has been made to broaden its scope.

### **Anticipation Rejections of Claims 1, 4, 5, 7, 19, 22, 23, 25 and 32**

At page 2 of the Office Action, claims 1, 4, 5, 7, 19, 22, 23, 25 and 32 are rejected under 35 U.S.C. § 102(b) as being anticipated by Lee (U.S. Patent No. 6,614,079).

Claim 1, from which claims 4-5, and 7 depend, recites elements of etching a dielectric spacer layer without the use of a sacrificial forming spacer to form L-shaped spacers for a gate structure, the L-shaped spacers including a first L-shaped spacer adjacent to a first sidewall of the gate structure and a second L-shaped spacer adjacent to a second sidewall of the gate

structure. Claim 19, from which claims 22-23, 25 and 32 depend, recites elements etching said first and second exposed surface portions of the dielectric spacer layer while forming first and second L-shaped spacers for the gate structure at respective locations of the first and second exposed surface portions. Claim 32 recites elements of forming a dielectric spacer layer over a semiconductor substrate and etching said dielectric spacer layer, prior to forming any layer overlying the dielectric layer, to form L-shaped spacers from the dielectric spacer layer for a gate structure, the L-shaped spacers including a first L-shaped spacer adjacent to a first sidewall of the gate structure and a second L-shaped spacer adjacent to a second sidewall of the gate structure.

The Examiner states at section 3 of the Office Action that Lee disclose at FIGs. 2C and 2D, column 7, lines 10-14, and column 8, lines 7-22, forming a gate structure that is formed without of the use of a sacrificial forming spacer to form L-shape spacers as recited. This assertion by the Examiner is contradicted by the disclosure of Lee beginning at line 7 of column 8, which discloses the use of thick nitride spacers and a photoresist layer, both of which correspond to a sacrificial forming layer. Relied upon portions of Lee are reproduced below as courtesy to the Examiner.

FIG. 2D illustrates the structure after L-shaped nitride spacers are formed. Specifically, following the removal of the thick Si spacers, portions of nitride layer are removed so as to form L-shaped spacers, each having vertical element and horizontal element. Specifically, the L-shaped nitride spacers are formed utilizing an etching process which is capable of selectively removing portions of the nitride layer. Note a photoresist may be placed over portions of the nitride layer that are not to be removed during this etching step. A preferred etching process which is employed in the present invention in removing portions of the nitride layer includes a wet chemical etch process wherein a chemical etchant such as  $\text{H}_3\text{PO}_4$  is employed. Using this etchant, the implanted regions of layer are selectively etched leaving the unimplanted regions to form an L-shaped spacer. (Emphasis added)

As clearly stated by Lee, a sacrificial forming spacer is used by Lee to form Lee's L-shaped spacers. Specifically, contrary to claim 1, Lee discloses at least two sacrificial forming spacers: one by the thick nitride spacers of Lee that are sacrificially removed (see FIGs. 2 and highlighted text above), and the other by the photoresist of Lee that is sacrificially removed from overlying portions of the nitride layer of Lee subsequent to the etching step of Lee. For at least these reasons, claim 1 is not anticipated by Lee. No support is put forth in Lee to disclose forming spacer without a sacrificial forming layer as recited in claim 1. In addition, claims 4, 5, and 7, which depend from claim 1, themselves contain novel elements at least by virtue of their dependency upon claim 1. Withdrawal of rejections of claims 1, 4, 5, and 7 are respectfully requested at least for these reasons.

Claim 19 recites etching said first and second exposed surface portions of the dielectric spacer layer while forming first and second L-shaped spacers for the gate structure at respective locations of the first and second exposed surface portions. As discussed above with respect to claim 1, Lee discloses forming a sacrificial forming spacer that protects the recited surface portions where the L-shaped spacer portions are formed. For at least this reason, it is not possible to etch the first and second exposed surface portions at the location where L-shape spacers are being formed as recited in claim 19. For at least this reason, claim 19 is not anticipated by the disclosure of Lee. In addition, claims 22, 23, and 25, which depend from claim 19, also contain elements not anticipated by Lee at least by virtue upon their dependency from claim 19. Withdrawal of the rejections of claims 19, 22, 23 and 25 are respectfully requested for at least these reasons.

Claim 32 recites etching a dielectric spacer layer, prior to forming any layer overlying a dielectric layer, to form L-shaped spacer from the dielectric spacer layer for the gate structure. Note, claim 32 has been amended to clarify that the L-shaped spacers are formed from the dielectric spacer layer. As previously discussed with respect to claim 1, Lee discloses forming sacrificial spacer layers overlying the dielectric layer prior to forming the L-shaped spacer. For at least this reason, claim 32 is not anticipated by Lee.

#### **Obviousness Rejection of Claims 2, 3, 6, 9-13, 20, 21, 24, and 27-31**

At page 3 of the Office Action, claims 2-3 and 20-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Haskell (U.S. Patent No. 4,818,714). At page 4

of the Office Action, claims 9-13 and 27-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Nishizawa (U.S. Patent No. 6,613,686). At page 5 of the Office Action, claim 6 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee in view of Verma (U.S. Patent No. 5,716,880). These rejections are respectfully traversed.

As noted above, Lee does not disclose or suggest each and every element as recited by claims 1 and 19. The Office Action does not assert that Haskell, Nishizawa or Verma disclose or suggest the missing elements of these claims. Accordingly the Office Action fails to establish that the proposed combinations of Lee, Haskell, Nishizawa or Verma disclose or suggest each and every limitation of claims 2-3, 6, 9-13, 20-21, 24, and 27-31 at least by virtue of their dependency from one of claims 1 or 19. Moreover, these claims recite additional limitations neither disclosed nor suggested by the cited references.

In view of the foregoing, it is respectfully submitted that the obviousness rejections of claims 2-3, 6, 9-13, 20, 21, 24, and 27-31 are improper at this time and withdrawal of these rejections therefore is respectfully requested.


#### **Conclusion**

The Applicants respectfully submit that the present application is in condition for allowance, and an early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number in order to expedite resolution of any issues and to expedite passage of the present application to issue, if any comments, questions, or suggestions arise in connection with the present application.

The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 01-0365.

Respectfully submitted,

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Date

  
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